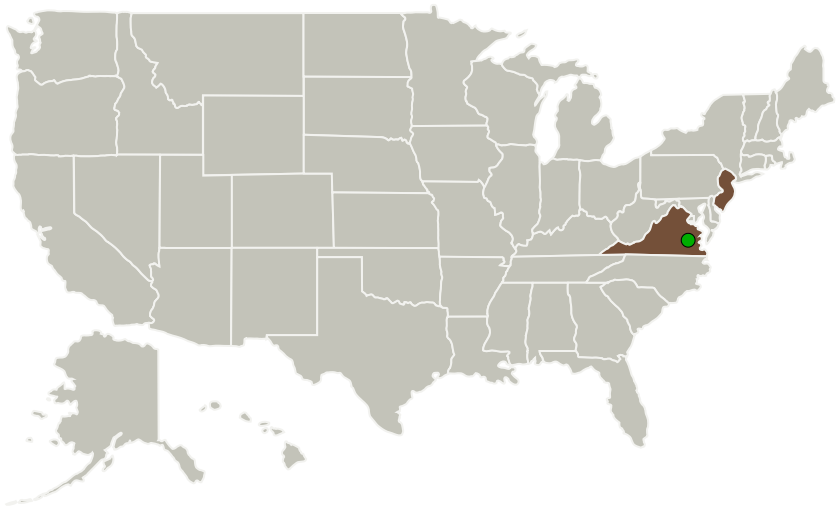
Narrow Wavelength, Frequency Modulated Source at 1.5µm Wavelength, Phase I

Completed Technology Project (2010 - 2010)

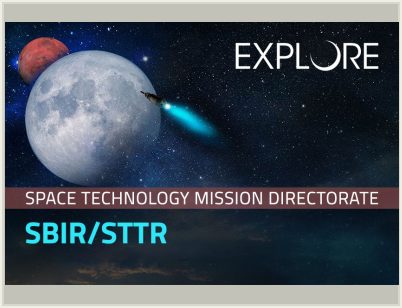
Project Introduction

NASA needs narrow linewidth lasers in the 1.5 or 2 micron wavelength regime for Lidar applications. The laser should be tunable by several nm and frequency modulated by 5GHz. Princeton Optronics has developed ultra-stable narrow linewidth diode pumped solid state lasers and developed high power Vertical Cavity Surface Emitting Laser (VCSEL) devices for fiber laser pumps as well as VCSEL pumped CW fiber lasers. In this SBIR, we propose to develop a fiber amplifier with a narrow line width seed laser for narrow wavelength output and the seed laser would be tunable and frequency modulated to a speed of 5GHz. By the end of the SBIR program we plan to deliver 10W level CW power fiber amplifiers with 10kHz linewidth in a small package. The package with the device would be space qualified and commercialized after development.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Princeton Optronics, Inc.	Lead Organization	Industry	Mercerville, New Jersey
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



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Primary U.S. Work Locations	
New Jersey	Virginia

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139990)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Princeton Optronics, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Laurence S Watkins

Co-Investigator:

Laurence Watkins

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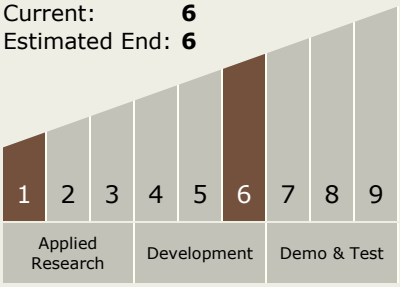
Completed Technology Project (2010 - 2010)

Technology Maturity (TRL)

Start: **1**
Current: **6**
Estimated End: **6**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.2 Electronics

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System